

## NOTES ON MIKANIA (COMPOSITAE)

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This is the first in a projected series of preliminary notes pertaining to the genus Mikania (Compositae-Eupatorieae). Primarily, these will consist of descriptions of new species and clarifications of synonymy. More comprehensive studies of a monographic nature of the species of various geographic areas or of a species complex will be published separately. It is intended over a period of years to eventually revise the entire genus. We wish to thank the curators of the more than twenty herbaria who have kindly loaned material to date.

### MIKANIA CORDATA (Burm. f.) Robinson

The description of Mikania cordata rests upon the plant named Eupatorium cordatum by Burman (Fl. Ind. 176, t. 58, fig. 2. 1768). The distribution cited was Java and Vera Cruce (Vera Cruz, Mexico). The type, if there ever was one, has not been located. However, when the description and drawing are compared with specimens from the East Indian region and from Mexico, there can be no reasonable doubt that the plant described is from Java and that this plant is M. cordata as proposed by Robinson (1934). Robinson cited the distribution as eastern tropical Africa, the East Indies, Formosa, Philippines, Java, Borneo, etc. He also stated that he must defer judgment on the African members of this affinity (M. scandens and relatives) and that they are "in need of clearer delimitation among themselves and sharper definition on the side of the East Indian M. cordata, which in fact seems to be present also in tropical Africa." After critical study of over 150 specimens from the East Indian region and comparing these with ca. 400 specimens from Africa it is apparent that the plants known previously as M. cordata from Africa are not conspecific with the true Asiatic M. cordata. It seems in fact that Robinson cited M. cordata from Africa on a "provisional" basis due primarily to sparcity of study material. He also provisionally placed M. cordata in Brazil.

In the absence of any authentic material we designate as lectotype t. 58, fig. 2 of Flora India (Burman 1768). By restricting Mikania cordata to the East Indian region, it is thus possible to separate the following species.

MIKANIA CHEVALIERI (C. D. Adams) Holmes & McDaniel, stat. nov.

M. cordata (Burm. f.) Robinson var. chevalieri C. D. Adams

Jour. W. African Science Assoc. 8: 136.

Type: "Nigeria," Keay & Meikle 524 K.

M. laxa A. Chev., Expl. Bot. Afr. Occid. Franc.

1: 360. 1920, not DC.

Type: "Ivory Coast," Chevalier 22651 K.

Robinson (1934) cited the key diagnostic characters of Mikania cordata as an open corymbose panicle, pedicels 3-5 mm long, branches of the inflorescence angled or slightly winged at bases, heads 7-7.5 mm long, phyllaries linear, 6 mm long, pappus bristles brownish, ca 40-45. In comparison, M. chevalieri possesses an open cyme or a cymose panicle, pedicels 5-15 mm long and is generally fewer headed. All of these characters together give the inflorescence a much more open appearance. The heads are 8-10 mm long, phyllaries 7-9.5 mm long, pappus bristles white to carneous, ca 60. In addition other differences noted when the two plants are examined side by side include the typically purplish color of the vegetative parts of M. chevalieri which is not found in M. cordata. Also the exterior bract of M. chevalieri is at the summit of the pedicel, appearing as a fifth involucre; whereas in M. cordata the exterior bract is always slightly separated from the involucres. Considering the above, M. chevalieri is easily specifically separable from M. cordata. The distribution of M. chevalieri includes west tropical Africa, Angola, Western Province of Zambia, and Equator and Oriental Provinces of Zaire. An extensive list of specimens examined will be cited in a comprehensive survey of the Old World species of Mikania.

MIKANIA ECUADORENSIS Holmes & McDaniel, sp. nov.

Herba volubilis; foliis ovatis acutis vel acuminatis, 2-5 cm longis, 1.5-4 cm latis, basi cordatis supra pilosis, subtus velutinis; corymbis 1-3 cm longis, 1-6 cm latis; capitulis 4-4.5 mm longis; corollis 2-2.5 mm longis; dentibus limbi late triangularibus; achaeniis ca 1.5 mm longis; pappi setis ca 22, 1.5 mm longis, crassis, non barbellatis.

Herbaceous twiner, stems 4-6 angled, lightly to moderately villous with sordid white jointed hairs, internodes 10-15 cm long. Leaves simple, ovate, entire to crenate-undulate, 2-5 cm long, 1.5-4 cm wide, apices acute to acuminate, bases cordate, the sinus wide, upper surfaces pilose, lower surfaces velutinous with sordid white jointed hairs, 3-7 nerved from the base, petioles

1-5 cm long, densely puberulent. Inflorescence a rounded to flat-topped corymb, sometimes rather dense, 1-3 cm long, 1-6 cm wide, branches with villous hairs, pedicels ca 1-3 mm long. Heads 4-4.5 mm long, exterior bract linear to lanceolate, ca 2.5 mm long, apices slightly erose to acuminate, outer surfaces pilose, appearing as a fifth involucre, involucre lanceolate, 3-4 mm long, apices acute to acuminate, pilose, obscurely 1-3 nerved. Corollas 2-2.5 mm long, white, with globular glands toward the summit, tube ca 1-1.2 mm long, gradually expanding into the throat, corolla lobes broadly triangular, ca 0.5 mm long, margins thickened. Achenes ca 1.5 mm long, glandular, brownish. Pappus bristles ca 22, 1.5 mm long, white, thick, non-barbellate.

Type: ECUADOR: Guayas: coastal plain, vicinity of Naranjoito, 120 ft., June 6-7, 1945, W. H. Camp E-3563 (MICH, holotype, BR, NY, RB).

ECUADOR: Guayas: Bushy places, Baloa, January 1892, Eggers 14336 (GH, L, US); Guayaquil, near the cement mill, July 15, 1939, E. Asplund 7698 (US); road from Guayaquil to Cuevedo, Miguel Wagner's hacienda area, 9 km n Guayaquil, 75-100 m, November 18, 1961, Dodson & Thien 1309 (US); Milagro, 50 m, June 30-July 2, 1923, A. S. Hitchcock 20184 (GH, NY, US), 20263 (GH, NY, US); open busy places, borders of maritime marshes near Naranjal, Lehmann 4886 (F, GH, US); Los Rios; Sudl. Babajoyo, October 28, 1933, H. J. E. Schimpff 344 (MO); PERU: Piura, November 14, 1911, C. H. T. Townsend 791 (F); Talara, 1925, O. Haught 83 (GH, US).

This plant is apparently confined to lowland Pacific Ecuador and nearby Peru. It has affinities with both Mikania micrantha H.B.K. and M. congesta DC., but can be distinguished by its thick pappus of ca 22 bristles rather than a thin, barbellate pappus of ca 35 bristles of the latter two species. In addition in M. ecuadorensis the lower leaf surfaces are characteristically covered with a velvety pubescence composed of sordid white jointed hairs.

MIKANIA MAZANENSIS Holmes & McDaniel, sp. nov.

Suffrutex volubilis; foliis ovatis acutis vel acuminatis, 5-10 cm longis, 3-6 cm latis basi subcordatis vel truncatibus, supra et subtus glabris; corymbis 3-18 cm longis, 5-10 cm latis; capitulis ca 7-10 mm longis; corollis ca 4.5-5 mm longis; dentibus limbi lanceolatis, ca 1.5-2 mm longis; achaeniis ca 2.5 mm long; pappi setis ca 120, ca 5 mm longis, basi vix barbellatis, supra manifeste barbellatis.

Twining vine, stems obscurely angled, glabrous, internodes ca 6-14 m long. Leaves ovate, 5-10 cm long, 3-6 cm wide,

semi-coriaceous, margins subentire to weakly crenate-undulate, apices acute to acuminate, bases subcordate to truncate, upper surfaces glabrous, weakly muricate, pale green, palmately 5-nerved from the base, major nerves whitish, lower surfaces glabrous, weakly bullate, pale green, major nerves wide (to 2.5 mm), whitish. Petioles ca 2-3 cm long, glabrous to weakly puberulent, whitish, ca 2 mm thick. Inflorescence corymbose, ca 3-8 cm long, 5-10 cm wide, branchlets angled, glabrous, pedicels ca 5-15 mm long, glabrous. Heads ca 7-10 mm long, exterior bract subulate to linear, ca 2-3 mm long, glabrous, borne near the middle or base of pedicel. Involucres lanceolate-elliptic to linear-lanceolate, ca 7 mm long, glabrous to weakly puberulent, margins thin, entire, moderately involute, apices acute, slightly erose, moderately puberulent. Corollas salverform, ca 4.5-5 mm long, cream, glabrous, tube ca 2.5 mm long, glandular near throat, corolla lobes ca 1.5-2 mm long, lanceolate. Achenes (immature) ca 2.5 mm long, smooth, light olive in color. Pappus bristles ca 120, in two series, ca 5 mm long, reddish in age, remotely barbellate at base, distinctly barbellate at tips.

Type: PERU: Loreto: Maynas. Gamitanacocha, Rio Mazan, elev. ca. 100-125 m, rising ground, February 12, 1935, Jose M. Schunke 231 (F, holotype, GH, UC).

This new species is known only from the type. However, it is amply distinct and can readily be identified by its open corymbose inflorescence with pedicels ca 5-15 mm long, the linear to subulate exterior bract borne well beneath the heads, the mostly linear-lanceolate involucres with involute margins, the corolla lobes distinctly longer than the throat proper and the numerous pappus bristles in two series. The inflorescence is similar to that of Mikania cordata (Burm. f.) Robins. or M. chevalieri Holmes & McDaniel of the Old World, but major differences occur in the corollas, pappus, placement of exterior bract, and leaves.

MIKANIA MEGALOPHYLLA Holmes & McDaniel, sp. nov.

Suffrutex volubilis; foliis elliptis, ca 33-40 cm longis, 13-17 cm latis, apice cuspidatis vel caudato-cuspidatis, basi truncatibus vel obtusis, supra glabris, subtus sparsim puberulentibus; paniculis ca 20 cm long, 7-15 cm latis; capitulis ca 3.5-5 mm longis, corollis ca 2.5-3 mm longis; dentibus limbi triangularibus; achaenius ca 1.5 mm longis; pappi setis ca 30-35, ca 3 mm longis.

Twining liana to ca 5 m long, stems terete, striate to sulcate, hollow, glabrous to villous (at nodes), internodes 10 cm or more long. Mature cauline leaves elliptic, ca 33-40 cm

long, 13-17 cm wide, margins mostly entire to weakly and obscurely crenate, apices cuspidate to caudate-cuspidate, bases truncate to obtuse, upper surfaces glabrous, dull green, veins pinnate, exserted, prominent, lower surfaces glabrous, lighter than above, veins exserted, prominent, slightly puberulent on major veins. Petioles ca 4 cm long, glabrous, sulcate, thick. Inflorescence paniculate, ca 20 cm long, 7-15 cm wide, open, ultimate branchlets spicate to glomerate-spicate, ca 1-4 cm long, branchlets slightly angular, puberulent, heads sessile. Heads ca 3-5 mm long, exterior bract elliptic to narrowly ovate, broadest near the base, ca 2-4 mm long, glabrous to weakly pilose, margins entire to erose, apices acute to subobtusate. Involucre ovate, ca 3.5-4 mm long, pilose, margins entire, slightly involute, apices obtuse, with a tuft of hair. Corollas salverform, ca 2.5-3 mm long, white, sparingly glandular, tube ca 1-1.25 mm long, throat ca 1.5-2 mm long, corolla lobes ca 0.5 mm long, triangular. Achene ca 1.5 mm long, glandular, smooth, light to dark brown, with a darkened ring at summit (near pappus bristles), pappus bristles ca 30-35, white, ca 3 mm long, barbellate, thickened at tips.

Holotype: PERU: San Martin: vine to 15 ft. long, fls white, w side of Rio Huallaga, s of Shapaja 1-4 km, elev. ca 900 ft., July 28-30, 1937, C. M. Belshaw 3153 (F).

BRAZIL: Rio Acre: Seringal S. Francisco, June 1911, E. Ule 9887 (L); PERU: Madre de Dios: Manu, in forest behind settlement, August 4, 1973, Robin B. Foster 2467 (F, MCD); San Martin: liana, fls white, Juan Jui, Alto Rio Huallaga, alt. ca 400-800 m, forest, May 1936, Klug 4363 (F); vine to 10 ft. long, fls white, w side of Rio Huallaga, s of Shapaja 1-4 km, alt. ca 900 ft., July 28-30, 1937, C. M. Belshaw 3154 (F, MO, UC).

Related species include Mikania klugii Robins., M. aquaria Robins., M. jelskii Hieron. and M. scabra DC.; all of which have similar inflorescences. However, these species have larger heads (7-9 mm), leaves less than 15 cm long, and with the exception of M. scabra DC., palmate venation and subcordate to cordate bases. Mikania scabra DC. has pinnate venation and rounded leaf-bases, but has scabrous upper-leaf surfaces.

MIKANIA YPCARAYENSIS Holmes & McDaniel, nomen novum

M. trachypleura Robinson, Contr. Gray Herb. 104: 46. 1934.

Type: PARAGUAY: in regione lacus Ypacaray, Hassler 12600 (GH, holotype, L, MO).

Regrettably Mikania trachypleura is based on a monstrosity and thus according to the International Code must be rejected. The holotype and isotypes appear to have diseased inflorescences. A "head" has 2-4 bracts inclosing 1-3 short pedicels which in turn have 2-4 bracts at their summit. This is repeated 3-4 times. At the ultimate segment a corolla-like structure is discernible, having 4 lobes, 2 of which appear to be anther-like structures, the other two stigma-like. No achene or pappus is evident.

Type: PARAGUAY: in regione lacus Ypacaray, April 1913, E. Hassler 12176 (GH, holotype, L, MO).

ARGENTINA: Chaco: Colonia Benitez, June 5, 1932, A. G. Schulz 205 (GH); Corrientes: April 1925, W. Lossen 595 (GH, MO); BRAZIL: Indefinite: Sello s.n. (GH); Minas Geraes: Lagoa Santa, Eug. Warming s.n. (GH); Sao Paulo: Bury, March 21, 1918, J. Gomes 1685 (GH); Butantan, April 17, 1917, F. C. Hoehne 52 (GH); feuchtes campo, Sao Caetano-Ypiranga, March 28, 1914, A. C. Brade 7092 (GH); Horto, March 3, 1901, collector unknown (GH); Itu, Russel 359 (GH); Limeira, April 18, 1945, J. de Lima 52471 (MO); Ypiranga, April 1901, Luederwaldt 217 (GH).

This is a vigorous, mostly herbaceous twiner of central and southern Brazil and neighboring Paraguay and Argentina. Diagnostic characters that separate this species from others are its softly and usually densely pilose stem, linear to lanceolate phyllaries with attenuate apices, the outer two phyllaries being loosely villulose and the upward serrulate to ciliolate ribs of the achenes.

#### LITERATURE CITED

- Burman, N. L. B. 1768. Flora Indica.
- Robinson, B. L. 1934. Mikania scandens and Near Relatives. Contr. Gray Herb. 104: 55-71.